



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,635	12/29/2000	Stephen S. Selkirk	00-059-DSK	9246

7590 08/09/2004

Wayne P. Bailey
Storage Technology Corporation
One StorageTek Drive
Louisville, CO 80028-4309

EXAMINER

LANE, JOHN A

ART UNIT	PAPER NUMBER
----------	--------------

2188

DATE MAILED: 08/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/751,635

Applicant(s)

SELKIRK ET AL.

Examiner

Jack A Lane

Art Unit

2188

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07/23/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 15 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office action is responsive to the preliminary amendment filed 07/23/2004. Claims 1-16 are presented for examination. Any objections or rejections made in the previous office action not specifically repeated below are withdrawn.

2. The examiner requests, in response to this Office action, support be shown for language added to any existing claims on amendment and any new claims which have been added or will be added. That is, indicate support for newly added language to claim 1 and new claim 11 by specifically pointing to page(s) and line no(s). in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application.

Election/Restrictions

3. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-14, drawn to a virtual data management subsystem, classified in class 711, subclass 114.

- II. Claims 15-16, drawn to creating a logical device based on storage characteristic requirements, classified in class 711, subclass 170.

4. The inventions are distinct, each from the other because:

Inventions Group I and Group II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention of Group II has separate utility such as in a memory device not have plural types of physical memory. See MPEP § 806.05(d).

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

6. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits.

Accordingly, claims 15 and 16 are withdrawn from consideration as being directed to a non-elected invention. See 37 C.F.R. § 1.142(b) and M.P.E.P. § 821.03.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

8. Claims 1-14 are rejected under 35 U.S.C. § 102(e) as being anticipated by Voigt et al. (Pat. No. 5,960,451).

Voigt teaches the claimed "virtual stored data management subsystem" as circuitry including administrator module 46 and data storage system 24 shown in figure 2. The claimed "one or more hosts" corresponds to computer 22. The claimed "pool of heterogeneous storage" corresponds to NVRAM cache memory 62A, 62B and disk array 50. The claimed "virtual data units" corresponds to the logical storage units (LUNs). The claimed "associated management information"

including "first and second boundaries...that limit preferences" corresponds to parameters/preferences such as physical capacity, number of storage disks, allocated capacity, characteristics of the RAID, percentage to be used (col. 2, line 55 – col. 3 , line 2) performance (col. 4, line 16) and availability (col. 7, lines 26-42). The claimed "logical device definitions" corresponds to LUN types, sizes, and identification numbers (col. 6, lines 55-57). Applicant should note maps within administrator module relate the various views of storage as discussed at column 5, lines 7-35

In the Remarks filed 06/16/03, applicant argues:

The claimed virtual data units are an abstraction layer above a logical device (as they are mapped into logical device definitions), and are therefore different from a logical device/logical storage unit as taught by [Voight].

In response, Voight teaches a RAID management system 56 that is an abstraction layer below the logical device/logical storage units (LUNs) within administrator module 46. Voight teaches the LUNS or LUN types are configured from application level virtual storage space which is an abstraction layer above RAID-level virtual storage and physical storage (col. 5. lines 7-20). That is, the LUNS (virtual storage units) are mapped into RAID-level virutal storage units which are then mapped into

Art Unit: 2188

physical storage units. This interpretation corresponds to applicants argument that the virtual data units (LUNs) are an abstraction layer above the logical device definitions (RAID-level virtual storage). Applicant should note the instant claims do not define the claimed virtual data units as an abstraction layer above the logical device definitions. Applicant questions whether "map the logical storage units (LUNS) into LUN types/sizes/ID numbers makes sense. The examiner contends the LUNS are given a type/size/ID in RAID management system 56, thus it can be said the LUNS are mapped into a specific type or size of LUN.

Any response to this action should be mailed to:

Under Secretary of Commerce for Intellectual Property
and Director of the United States Patent and Trademark
Office
PO Box 1450
Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306, (for Official communications intended
for entry)

Or:

(703) 872-9306, (for Non-Official or draft
communications, please label "Non-Official" or
"DRAFT")

Hand-delivered responses should be brought to Crystal Park
II, 2121 Crystal Drive, Arlington, VA., Sixth Floor
(Receptionist).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack A. Lane whose telephone number is 703 305-3818. The examiner can normally be reached on Mon-Fri from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 703 306-2903.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-3900.



JACK A. LANE
PRIMARY EXAMINER